- Gender: female
- Age: 40 y/o
- Date of birth: 民國51/11/25
- Date of admission: 90/2/26
- Marital status: unmarried

- Chief complaint:

  Admit for the hepatic nodules evaluation

- Present illness:

  This 40 y/o male patient was quite well until 86/10. She visited our GI OPD for general weakness and abnormal LFT history. However, HBsAg was negative at that time. She visited GI OPD again in 90/2 due to chronic hepatitis C noted via health examination. Unfortunately, multiple hepatic nodules were noted via abdominal echo on 90/2/12. Abdominal CT and MRI were performed later. Metastasis or hemangiomas are not likely, multicentric hepatomas is first considered. So she was admitted for further evaluation and management.

  she denied any discomfort, jaundice-like appearance, tea color urine, fever, nauseam vomiting and body weight loss. Review her past history, she took contraceptives and Vitamin E tabs for years. Shhe also had been traveling to Thailand in 2000/4. No special food intake, no tatto hx, no dental therapy was noted recently. She had been blood donation for 28 times but no blood transfusion record.

- Family history
  - Denied any systemic disease and cancer
- Personal history:
  - Allergy: not known
  - Smoking: nil
  - Alcohol: nil
  - Drug: contraceptives and VitE for years
- Past history:
  - HCV carrier

- Physical examination:
  - GA: fair appearance
  - Conscious: clear
  - Vital sigh: TPR= 36.9, 22/min, 70/min
  - BP= 140/92
  - HEENT: NP, sclera not icteric
  - Neck: no LAP, no JVE
  - Chest: NP
  - Abdomen: soft, no tenderness, hyperactive bowel
    - Liver/spleen: impalpable, liver span: 8-9 cm at RMCL
  - Back and extremities: NP

Sonography; 2001/02/12

- Liver: mild heterogenicity. One mild hyperechoic lesion with hypoechoic margin at S3 to S4, size about 43x70 mm, another one at S8, diameter about 41mm, two hypoechoic lesions at S4, size 12 mm and 13 mm
- Impression:
  - r/o metastatic tumor, liver
  - Diffuse liver parenchymal disease

Lab data

- 生化檢查
- Albumin 4.4
- Protein T 7.7
- Uric acid 6.9
- Chol 170
- TG 108
- ALK-P163
- r-GT125

Lab data

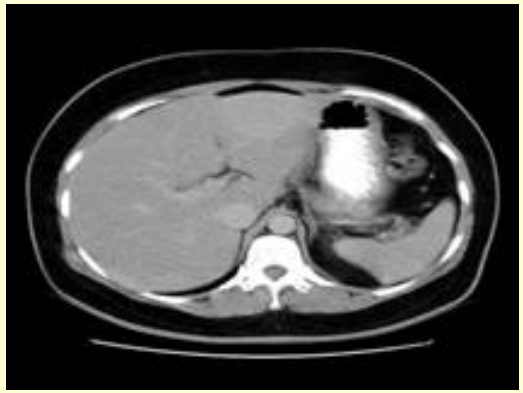
- **血液檢驗**
- WBC 8.72
- RBC 4.42
- HGB 13.4
- HCT 38.0
- PLT 318
- NEUT 63.1
- LYM 29.9
- PT_FIB 11.77
- APTT_T 30.95

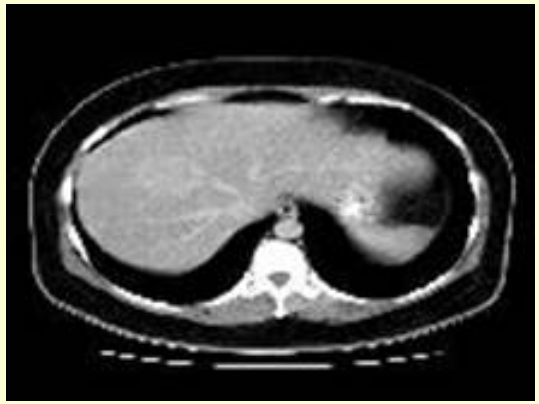
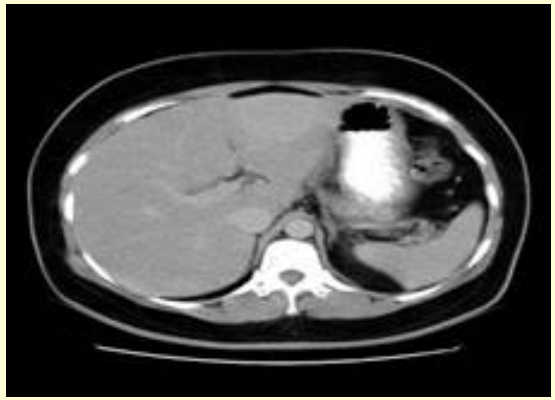
- **急診生化**
- GOT(血) 42
- GPT(血) 77
- Bilirubin D 0.1
- Bilirubin T 0.5
- Na+ 140.0
- K+ 3.50

CT; 2001/2/12

- Abdominal CT without & with contrast enhancement shows: Multiple hepatic tumors in both lobes of liver. Well enhancement of these tumors at arterial phase fade out gradually at delayed phase. The portal and heaptic veins are patent. The spleen,pancreas,kidneys and G-I tract seem normal. No apparent enlarged LNs is found. Imp:Multiple hepatic tumors.
- D/D Hepatoma,hemangioma or metastasis.

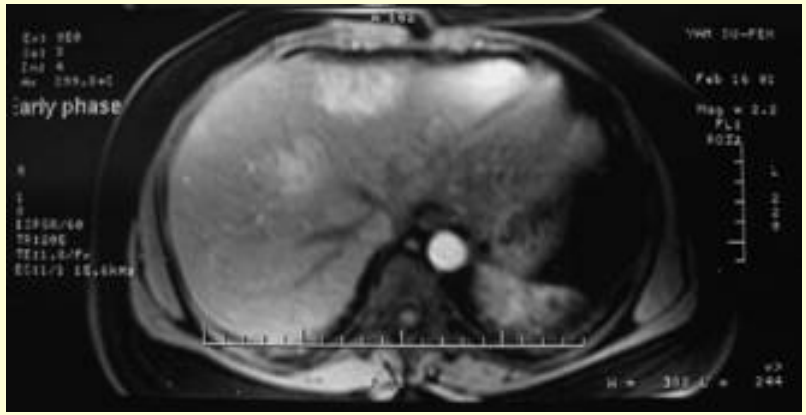
Arterial phase Venous phase Delay phase

MRI; 2001/02/16

- There are multiple high SI nodules on both T1W and T2W images noted within both lobes of the liver. Significant homogeneous contrast enhancement of the nodules on the early arterial phase and mild fade on the portal and delayed venous phases. The visible spleen, pancreas and kidneys are unremarkable.
- Conclusion: Multiple liver nodules, metastasis or hemangiomas are not likely, multicentric hepatomas is first considered.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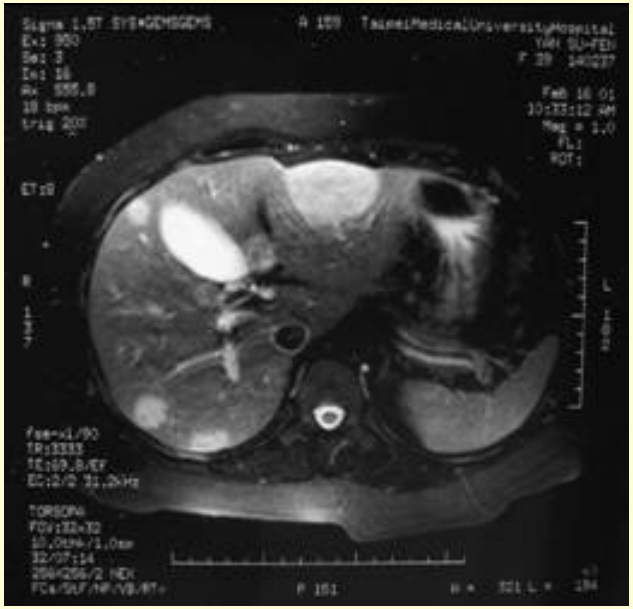
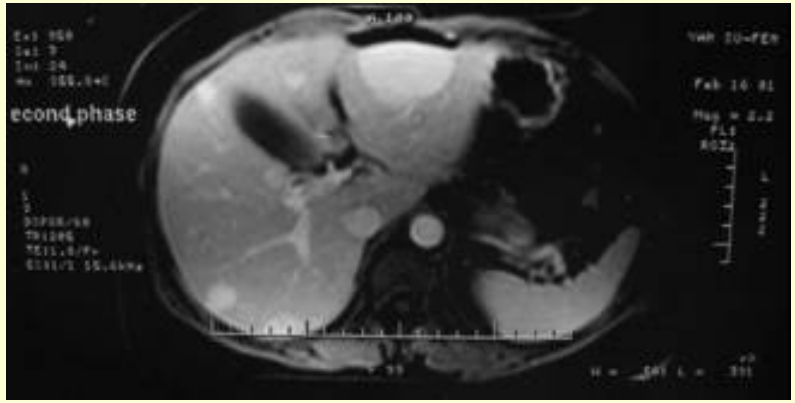
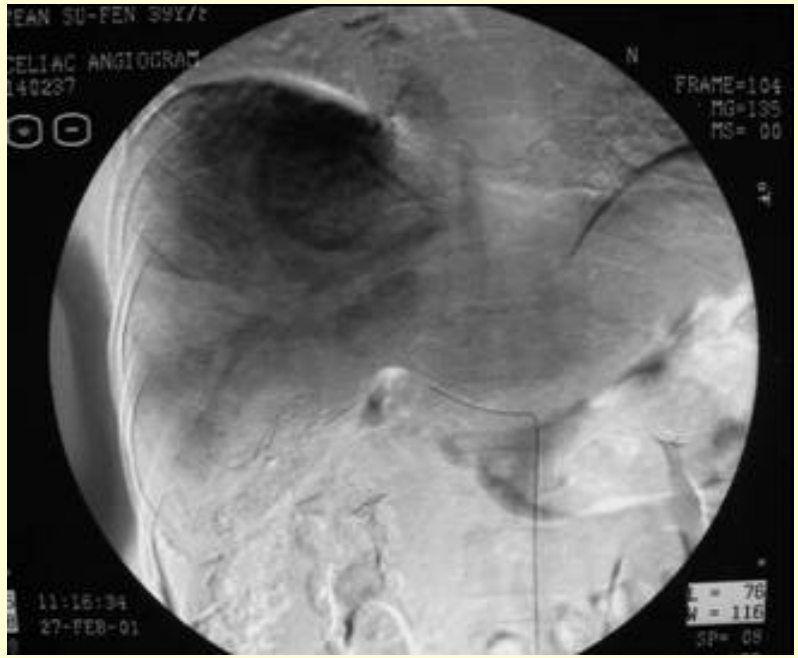



econd phase

Celiac Angiography; 2001/02/27



Pathology

- Liver, biopsy, compatible with hepatocellular adenoma (see description)
  - 病理診斷
- Microscopically, it shows hyperplastic hepatocellular condition composed of bland looking hepatocytes arranged in cell cords with sinusoidal dilatation. Focal fatty metamorphosis and fibrin deposition in the sinusoid are also noted. No central scar or pseudoductules is seen. No evidence of liver cirrhosis is found. The above picture is compatible with hepatocellular adenoma.

Discussion

D/D of Liver masses

HCC

- Ultrasound: increased or decrease echogenicity comparing with surrounding parenchyma. When with central necrosis– may described as a cyst or target lesion
- CT: Intense contrast enhancement is sometimes seen within the tumor or immediately surrounding it.
  - Arterial phase: sone HCC as hypervascular lesions
  - Protal venous phase: become hypoattenuating or isoattenuating relative to adjacent parenchyma
- MRI: signal intensity higher than normal liver on a T1-weighted scan and a lower signal intensity on a T2-weighted scan

Liver cyst

- Ultrasound: sharp margin, no echoes with the lesion, posterior acoustic enhancement
- CT: very well defined margin, have attenuation values similar to that of watergallbladder)
- MRI: signal intensity of water(low signal on a T1-weighted scan and high signal on a T2 weighted scan)

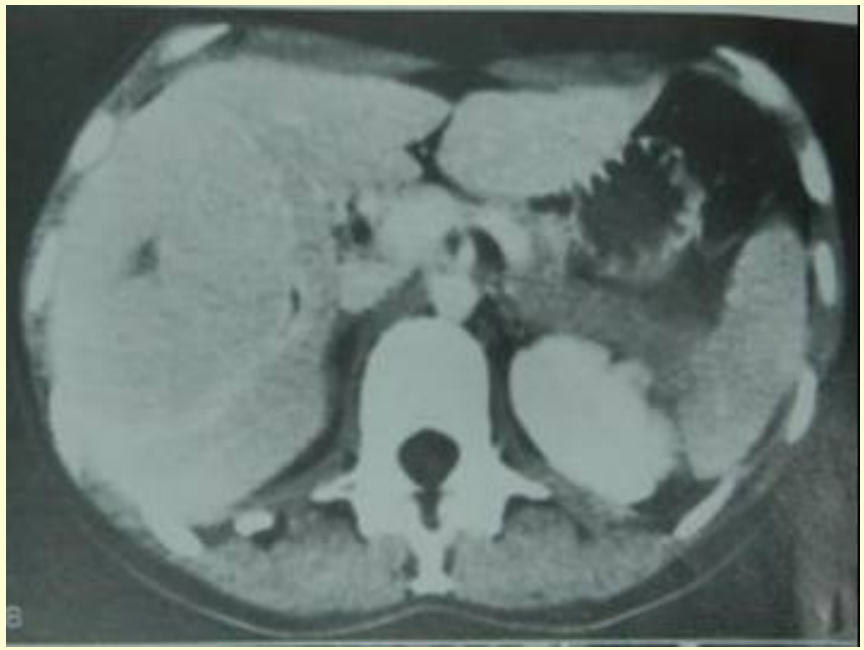
Hemangioma

- Percutaneous needle biopsy may be dangerous
- Ultrasound– well-defined tumor with sharp margin
- CT–
  - Before enhancement: round, low density lesion.
  - With enhancement: from the periphery to the center, density increases to become similar with that of the surrounding liver
- MRI: uniform very high intensity on T2-weighted images
- Angiography: persistance of contrast

Focal Nodular Hyperplasia

- Benign tumor, normal hepatocyte arranged abnormally and presence of scar distributed centrally and throughout the tumor
- CT– well defined; central scar within (sometimes), appeared to have the same density as the normal liver
  - Large FNH: Unenhenced-- less dense

    Enhanced– marked increas in density



Hepatocellular Adenoma

- 90% of patient are women who take oral contraceptives (4 per 100,000 of women who take oral contraceptives)
- CT– well defined mass(capsule); density varied from homogeneously hypodence(fat and glycogen within hepatocyte) to isodence
  - Enhanced CT– an increasing density area within it due to recent hemorrhage
- Non-specific, both highintense on T1 and T2 WI (77% and 74%), most are heterogeneous (92%)
- When with central necrosis– cyst like

Pathologic feathers	Ultrasound	CT	MRI	Angiography
Internal fat	Hyperechoic	Hypodense	Increased signal on T1-MI	--
Internal hemorrhage/ necrosis	Hyperechoic acutely/cystic	Hyperdense acutlely/ hypodense later	Increased-signal on T1-W1	--
Peripheral feeding vessels	Peripheral flow by color Doppler	Peripheral enchance	Peripheral enchance	Peripheral vascularity

Reference

- Peter Armstrong, Diagnostic Imaging 1998
- Joseph T. Ferrucci, Hepatobiliary Radiology 1990
- G. Scott Gazelle, Hepatobuleary and Pancreatic: Radiology Imaging and Intervention 1998

Thanks for your attention !